

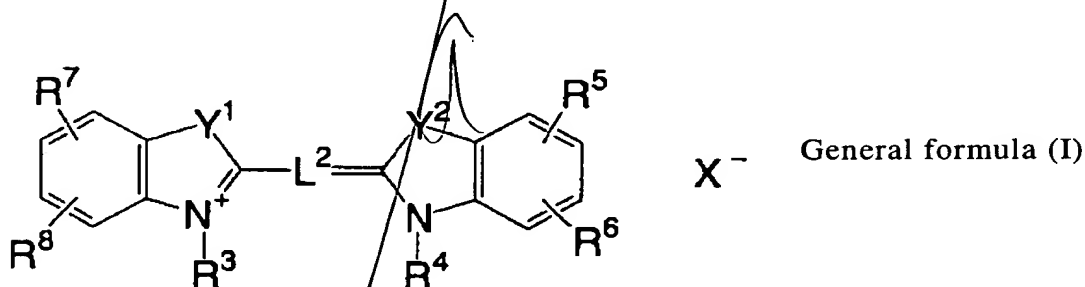
WHAT IS CLAIMED IS:

*add A'*

1. A positive-type planographic printing plate precursor comprising:

a photosensitive layer obtained by coating and drying on a support a photosensitive layer coating solution formed of a photosensitive composition, which contains a cyanine dye represented in the following general formula (I) and a polymer insoluble in water and soluble in an aqueous alkali solution, dissolved or dispersed in a solvent system containing 80% by weight or more of a solvent having a boiling point lower than 100°C in a solvent having a boiling point lower than 200°C;

wherein a solubility in an aqueous alkali solution of the photosensitive layer is increased by an infrared laser exposure:



wherein, each of Y<sup>1</sup> and Y<sup>2</sup> represents a dialkylmethylene group or a sulfur atom; each of R<sup>3</sup> and R<sup>4</sup> represents an alkyl group, alkenyl group, alkynyl group or phenyl group which may have substituents; L<sup>2</sup> represents a trimethyne group, pentamethyne group or heptamethyne group which may have substituents, and two substituents of the pentamethyne group or the heptamethyne group may be combined with

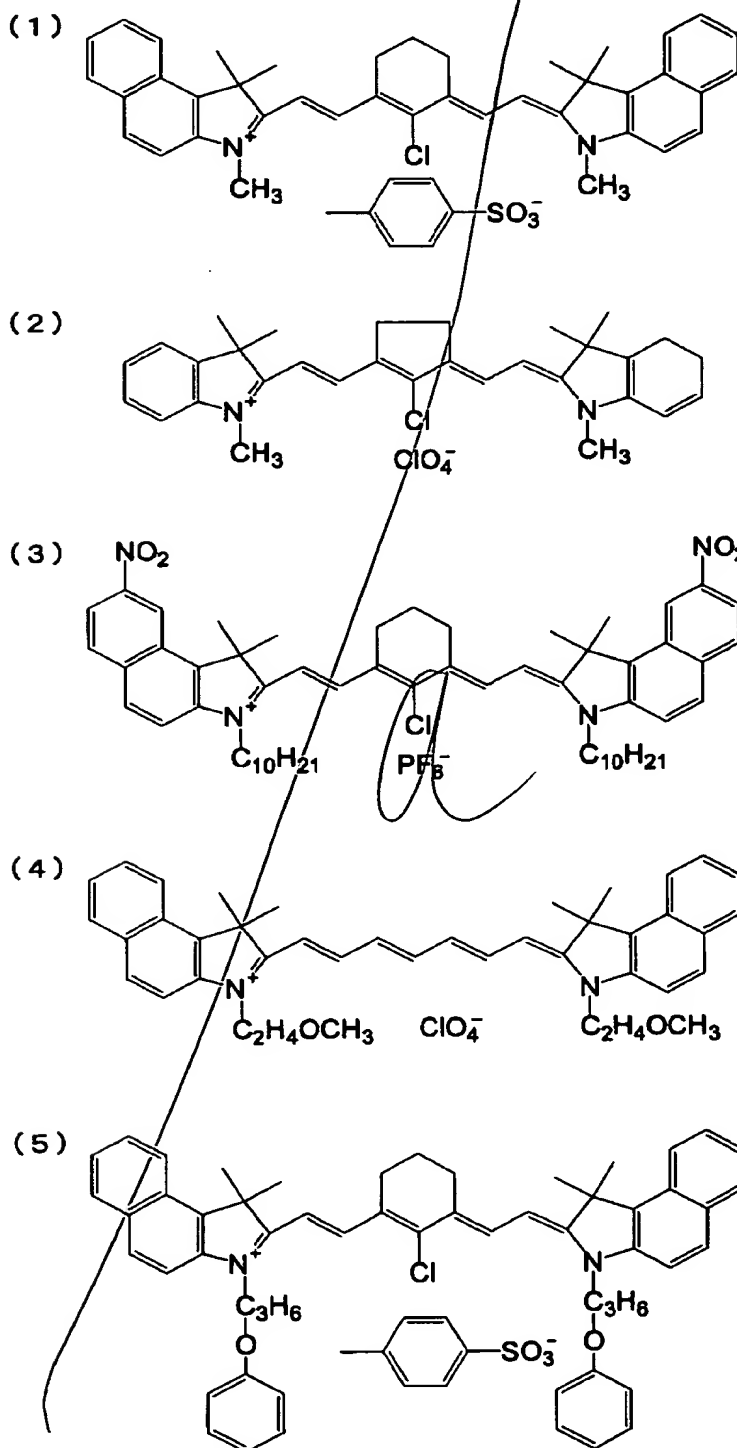
each other to form a cycloalkene ring having 5 to 7 carbon atoms; each of R<sup>5</sup> through R<sup>8</sup> represents a hydrogen atom or an alkyl group, alkenyl group, alkoxy group, cycloalkyl group or aryl group which may have substituents, and R<sup>5</sup> and R<sup>6</sup>, and R<sup>7</sup> and R<sup>8</sup> may be combined with each other to form a ring structure; and X<sup>-</sup> represents an anion.

2. A positive-type planographic printing plate precursor according to claim 1, wherein the photosensitive layer coating solution is formed of the photosensitive composition dissolved or dispersed in a solvent system containing 90% by weight or more of the solvent having the boiling point lower than 100°C in the solvent having the boiling point lower than 200°C.

3. A positive-type planographic printing plate precursor according to claim 1, wherein residual solvents contained in the photosensitive layer contain 50% by weight or more of the solvent having the boiling point lower than 100°C in the solvent having the boiling point lower than 200°C.

4. A positive-type planographic printing plate precursor according to claim 1, wherein residual solvents contained in the photosensitive layer contain 70% by weight or more of the solvent having the boiling point lower than 100°C in the solvent having the boiling point lower than 200°C.

5. A positive-type planographic printing plate precursor according to claim 1, wherein the cyanine dye represented in the general formula (I) is at least one of compounds (1) to (5) shown below.

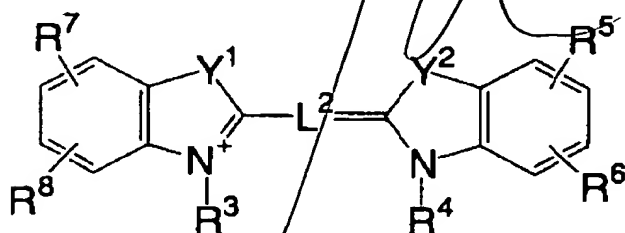


6. A method for producing a positive-type planographic printing plate precursor comprising the steps of:

preparing a photosensitive composition containing a cyanine dye represented in the following general formula (I) and a polymer insoluble in water and soluble in an aqueous alkali solution;

preparing a photosensitive layer coating solution by dissolving or dispersing the photosensitive composition in a solvent system containing 80% by weight or more of a solvent having a boiling point lower than 100°C in a solvent having a boiling point lower than 200°C; and

coating and drying the photosensitive layer coating solution on a support to form a photosensitive layer:



$X^-$  General formula (I)

wherein, each of  $Y^1$  and  $Y^2$  represents a dialkylmethylene group or a sulfur atom; each of  $R^3$  and  $R^4$  represents an alkyl group, alkenyl group, alkinyl group or phenyl group which may have substituents;  $L^2$  represents a trimethyne group, pentamethyne group or heptamethyne group which may have substituents, and two substituents of the pentamethyne group or the heptamethyne group may be combined with

each other to form a cycloalkene ring having 5 to 7 carbon atoms; each of R<sup>5</sup> through R<sup>8</sup> represents a hydrogen atom or an alkyl group, alkenyl group, alkoxy group, cycloalkyl group or aryl group which may have substituents, and R<sup>5</sup> and R<sup>6</sup>, and R<sup>7</sup> and R<sup>8</sup> may be combined with each other to form a ring structure; and X<sup>-</sup> represents an anion.

7. A method for producing a positive-type planographic printing plate precursor according to claim 6, wherein the step of preparing the photosensitive layer coating solution includes dissolving or dispersing the photosensitive composition in a solvent system containing 90% by weight or more of the solvent having the boiling point lower than 100°C in the solvent having the boiling point lower than 200°C.

8. A method for producing a positive-type planographic printing plate precursor according to claim 6, wherein residual solvents contained in the photosensitive layer contain 50% by weight or more of the solvent having the boiling point lower than 100°C in the solvent having the boiling point lower than 200°C.

9. A method for producing a positive-type planographic printing plate precursor according to claim 6, wherein residual solvents contained in the photosensitive layer contain 70% by weight or more of the solvent having the boiling point lower than 100°C in the solvent having the boiling point lower than 200°C.

10. A method for producing a positive-type planographic printing plate precursor according to claim 6, wherein the cyanine dye represented in the general formula (I) is at least one of compounds (1) to (5) shown below.

